

What is claimed is:

1. A method for detecting molecules expressing a selected epitope in a sample comprising:

- (a) immobilizing a molecule expressing a selected epitope in a sample to a solid support;
- (b) contacting the solid support with a molecule that specifically binds to the selected epitope, streptavidin and a biotinylated oligonucleotide, wherein the molecule that specifically binds to the selected epitope is a biotinylated monoclonal antibody, a biotinylated FAb, a biotinylated F(Ab)₂, a biotinylated humanized or chimeric antibody with or without a human Fc, a biotinylated single chain Fv, a biotinylated constrained epitope specific CDR, a biotinylated CDR mimetic, a biotinylated engineered CDR structure, a monoclonal antibody that comprises a universal epitope, a FAb that comprises a universal epitope, a F(Ab)₂ that comprises a universal epitope, humanized or chimeric antibody that comprises a universal epitope, a single chain Fv that comprises a universal epitope, a constrained epitope specific CDR that comprises a universal epitope, a CDR mimetic that comprises a universal epitope, or a engineered CDR structure that comprises a universal epitope, wherein if the molecule that specifically binds to the selected epitope is a monoclonal antibody that comprises a universal epitope, a FAb that comprises a universal epitope, a F(Ab)₂ that comprises a universal epitope, humanized or chimeric antibody that comprises a universal epitope, a single chain Fv that comprises a universal epitope, a constrained epitope specific CDR that comprises a universal epitope, a CDR mimetic that comprises a universal epitope, or a biotinylated engineered CDR structure that comprises a universal epitope, the solid support is additionally contacted with a biotinylated molecule that binds to the universal epitope, wherein the biotinylated molecule that binds to the universal epitope is a biotinylated monoclonal antibody, a biotinylated FAb, a biotinylated F(Ab)₂, a

biotinylated humanized or chimeric antibody preferably with or without a human Fc a biotinylated single chain Fv, a biotinylated constrained epitope specific CDR, a biotinylated CDR mimetic, or a biotinylated engineered CDR structure,

whereby the molecule that specifically binds to the selected epitope binds to
5 the selected epitope of the molecule immobilized to the solid support and, if it is biotinylated, to the streptavidin which binds to the biotinylated oligonucleotide that comprises an RNA polymerase promoter, and if it comprises a universal epitope, to the biotinylated molecule that binds to the universal epitope which the streptavidin which binds to the biotinylated oligonucleotide that comprises an RNA polymerase promoter ;

10 (c) amplifying the oligonucleotide by RNA amplification to produce an RNA amplification product;

(d) contacting the amplified oligonucleotide with a fluorescent dye which stains the RNA amplification product; and

15 (e) detecting fluorescence emitted from the stained RNA amplification product that is indicative of the molecule comprising the selected epitope being present in the sample.

2. The method of claim 1 wherein the molecule comprising the selected epitope present in the sample is quantified by measuring fluorescence emitted from the stained RNA amplification product whereby the amount of fluorescence emitted is correlated to the amount of the molecule comprising the selected epitope present in the sample.

3. The method of claim 1 wherein the oligonucleotide is double stranded DNA.

4. The method of claim 1 wherein the oligonucleotide is double stranded DNA having at least 100 base pairs.

5. The method of claim 1 wherein the oligonucleotide is double stranded DNA having at least 500 base pairs.

6. The method of claims 1-5 wherein the oligonucleotide comprises an RNA polymerase termination sequence.

10 7. The method of claims 1-6 wherein the oligonucleotide comprises a T7 RNA polymerase promoter and a T7 RNA polymerase termination sequence.

8. The method of claims 1-7 wherein the solid support is a chip, bead or surface in a well of a multi-well plate.

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9. The method of claims 1-8 wherein the solid support comprises an immobilized molecule that binds to the molecule that expresses the selected epitope.

10 A method for profiling proteins in a cell lysate comprising:

20 (a) adding to the cell lysate a mixture of biotinylated molecules that specifically bind to different selected epitopes, wherein the biotinylated molecules that specifically bind to the selected epitopes are biotinylated monoclonal antibodies, biotinylated FAb fragments, a biotinylated F(Ab)₂ fragments, biotinylated humanized or chimeric antibodies, biotinylated single chain Fvs, biotinylated constrained epitope specific CDRs, biotinylated CDR mimetics, or biotinylated engineered CDR structures, wherein the

biotinylated molecules that specifically bind to the selected epitopes are linked to streptavidin that is linked to biotinylated oligonucleotides that comprises an RNA polymerase promoter, wherein biotinylated molecules that specifically bind to different selected epitopes are linked to oligonucleotides of different lengths

5 (b) amplifying the oligonucleotides by RNA amplification to produce RNA amplification products;

(c) contacting the RNA amplification products with a fluorescent dye which stains the RNA amplification products and separating the RNA amplification products via electrophoresis; and

10 (d) visualizing the RNA amplification products via fluorescence so that the profile of proteins in the lysate can be determined.

11. The method of claim 10 wherein the profile of proteins in the lysate is quantified by measuring fluorescence emitted from the stained RNA amplification products whereby the 15 amount of fluorescence emitted is correlated to the amount of the molecule comprising the selected epitope present in the lysate.

12. The method of claim 10 wherein the oligonucleotides are double stranded DNA.

20 13. The method of claim 10 wherein the oligonucleotides are double stranded DNA having at least 100 base pairs.

14. The method of claim 10 wherein the oligonucleotides are double stranded DNA having at least 500 base pairs.

15. The method of claims 10-14 wherein the oligonucleotides comprise an RNA polymerase termination sequence.

16. The method of claims 10-15 wherein the oligonucleotides comprise a T7 RNA polymerase promoter and a T7 RNA polymerase termination sequence.

17. A kit for detecting and/or quantifying molecules that comprise a selected epitope comprising:

10 (a) a container comprising a biotinylated monoclonal antibody for the selected epitope, a biotinylated FAb for the selected epitope, a biotinylated F(Ab)₂ for the selected epitope a biotinylated humanized or chimeric antibody for the selected epitope, a biotinylated single chain Fv for the selected epitope, a biotinylated constrained epitope specific CDR, a biotinylated CDR mimetic for the selected epitope or a biotinylated engineered CDR structure for the selected epitope;

15 (b) a container comprising streptavidin

(c) a container comprising a biotinylated oligonucleotide that comprises an RNA polymerase promoter;

(d) a container comprising an RNA polymerase; and

(e) a container comprising a fluorescent dye;

20 or

(a) a container comprising reagents to biotinylate a monoclonal antibody, a FAb, a F(Ab)₂, a humanized or chimeric antibody, a single chain Fv for the epitope, a constrained epitope specific CDR, a CDR mimetic or a engineered CDR structure;

(b) a container comprising streptavidin

(c) a container comprising a biotinylated oligonucleotide that comprises an RNA polymerase promoter;

(d) a container comprising an RNA polymerase; and

(e) a container comprising a fluorescent dye;

5 or

(a) a container comprising a monoclonal antibody for the selected epitope that comprises a universal epitope, a FAb for the selected epitope that comprises a universal epitope, a F(Ab)₂ for the selected epitope that comprises a universal epitope, a humanized or chimeric antibody for the selected epitope that comprises a universal epitope, a single chain 10 Fv for the selected epitope that comprises a universal epitope, a constrained epitope specific CDR that comprises a universal epitope, a CDR mimetic for the selected epitope that comprises a universal epitope or an engineered CDR structure for the selected epitope that comprises a universal epitope;

(b) a container comprising a biotinylated monoclonal antibody for the universal epitope, a FAb for the universal epitope, a F(Ab)₂ for the universal epitope, a humanized or chimeric antibody for the universal epitope, a biotinylated single chain Fv for the universal epitope, a biotinylated constrained universal epitope specific CDR, a biotinylated CDR mimetic for the universal epitope or a biotinylated engineered CDR structure for the universal epitope;

20 (c) a container comprising streptavidin

(d) a container comprising a biotinylated oligonucleotide that comprises an RNA polymerase promoter;

(e) a container comprising an RNA polymerase; and

(f) a container comprising a fluorescent dye.

18. The kit of claim 17 further comprising a solid support.

19. The kit of claim 17 further comprising a solid support and a container that comprises a molecule that binds to the molecule that expresses the selected epitope.

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20. The kit of claim 17 further comprising a solid support that is a chip, bead or surface in a well of a multi-well plate.

21. The kit of claim 17 further comprising a solid support that is a chip, bead or surface in
10 a well of a multi-well plate and a container that comprises a molecule that binds to the molecule that expresses the selected epitope.

22. A kit for profiling proteins comprising:

(a) a container comprising a mixture of biotinylated monoclonal
15 antibodies for selected epitopes, biotinylated FAb for selected epitopes, biotinylated F(Ab)₂s for selected epitopes, humanized or chimeric antibodies for selected epitopes, biotinylated single chain Fvs for selected epitopes, biotinylated constrained epitope specific CDRs, biotinylated CDR mimetics or biotinylated engineered CDR structures conjugated with biotinylated oligonucleotides of different lengths by a streptavidin bridge;

20 (b) a container comprising an RNA polymerase; and
(c) a container comprising a fluorescent dye.

23. The kit of claims 17-22 wherein the oligonucleotide is double stranded DNA.

24. The kit of claims 17-22 wherein the oligonucleotide is double stranded DNA having at least 100 base pairs.
25. The kit of claims 17-22 wherein the oligonucleotide is double stranded DNA having
5 at least 500 base pairs.
26. The kit of claims 17-25 wherein the oligonucleotide comprises an RNA polymerase termination sequence.
- 10 27. The kit of claims 17-26 wherein the oligonucleotide comprises a T7 RNA polymerase promoter and a T7 RNA polymerase termination sequence.